

PATENT CLAIMS

1. A method of treating, filtering and cleaning a working medium, having at least one filter (2) in a filter housing (1) which is adjoined by a discharging arrangement (4) for discharging a filter cake, characterized in that the filtered-out particles are compacted in stages in the discharging arrangement (4) to form the filter cake and the compacted filter cake is discharged once a predetermined thickness has been reached.

2. A method of treating, filtering and cleaning a working medium, having at least one filter (2) in a filter housing (1) which is adjoined by a discharging arrangement (4) for discharging a filter cake, characterized in that the medium is caused to move, in particular is vortexed, just before and/or during transfer between the filter housing (1) and discharging arrangement (4).

3. A method of treating, filtering and cleaning a working medium, having at least one filter (2) in a filter housing (1) which is adjoined by a discharging arrangement (4) for discharging a filter cake, characterized in that the filter housing is subjected to pressure for the purpose of discharging the filter cake and/or the filter cake is extracted from the discharging arrangement by suction.

4. The method as claimed in one of claims 1 to 3, characterized in that the filter is back-flushed at certain

time intervals, with the back-flushing pulse possibly also being used to discharge the filter cake.

5. The method as claimed in claim 4, characterized in that air or some other pressure medium, in particular filtrate, is introduced into the filter interior.

6. The method as claimed in claim 4 or 5, characterized in that the filter is externally subjected to the action of working medium or some other flushing medium during the back-flushing operation.

7. The method as claimed in claim 6, characterized in that the filter is subjected to the action of flushing medium via flushing nozzles, which are oriented in the direction of the filter.

8. The method as claimed in at least one of claims 1 to 7, characterized in that the thickness of the cake is determined via a distance measurement or automatically when a certain thickness of the briquette of a pressing piston (13) has been reached.

9. The method as claimed in one of claims 1 to 8, characterized in that a pressure of the pressing piston (13) is determined.

10. The method as claimed in claim 9, characterized in that there is an increase in pressure of the pressing piston (13) during the final pressing stage.

11. The method as claimed in at least one of claims 1 to 10, characterized in that the filtrate is forced out of the

filter cake back into a feed hopper (5).

12. An apparatus for implementing the method as claimed in at least one of claims 1 to 11, characterized in that, from the filter housing (1), a hopper (5) opens into an antechamber (19) of the discharging arrangement (4), which is adjoined by a pressing chamber (20), the antechamber (19) and the pressing chamber (20) being assigned a pressing piston (13).

13. The apparatus as claimed in claim 12, characterized in that the pressing chamber (20) is closed by a slide (21).

14. The apparatus as claimed in claim 12 or 13, characterized in that the pressing piston (13) is assigned at least one sensor for determining the position of the pressing piston (13).

15. The apparatus as claimed in one of claims 12 to 14, characterized in that the pressing piston (13) is connected to a piston rod (15) via a threaded bolt (14), which is inserted into the pressing piston (13) from the end side.

16. The apparatus as claimed in at least one of claims 7 to 15, characterized in that at least the lateral surface of the pressing piston (13) consists, at least in part, of plastic.

17. An apparatus for implementing the method as claimed in at least one of claims 1 to 16, characterized in that, from the filter housing (1), a hopper (5) opens into an antechamber (19) of the discharging arrangement (4), a wall

(8) of the hopper itself or a hopper (5) having, or forming, at least one aperture for the through-passage of a liquid into the hopper (5).

18. The apparatus as claimed in claim 17, characterized in that the wall (8) maintains a distance, at least in part, from a side wall (2) of the filter housing (1).

19. The apparatus as claimed in claim 17 or 18, characterized in that the working medium which flows into the filter housing (1) and is to be cleaned can flow against the aperture-forming wall (8).

20. A discharging arrangement (4) for discharging a filter cake, characterized in that a pressing chamber (20) is arranged downstream of an antechamber (19) for accommodating filtered-out particles, the two chambers (19, 20) are assigned a pressing piston (13) and the course of the latter is monitored by sensors, the pressing chamber (20) being closed by a slide (21).